

Collect, process and storing of measurement data

## Data logger – MDL 4/1

The MDL 4/1 is optimized to collect data for environmental monitoring and measuring sites far from any infrastructure. Robust and reliable technology enables secure data storage and data transfer by radio, GSM or GPRS. The remote parameterization is executed by modem / GSM.



A flexible management and support by an assistance-system enables an easy plug-in and parameterization of any type of sensor without any need of external wiring at the sensor interface. For each sensor the measurement- and storing interval can be defined. For special measurement requirement a conditional storing can be activated.

The data logger includes a comprehensive alarm management via modem by phone call or SMS. The notification can also activate a relay output.

The non-volatile storage of 2MB can save up to 600.000 measurement values. The data logger saves actual values, average, minimum, maximum, standard deviation, sum and intenseness.

Standard serial interface is designed for data transfer by modem (analogue, ISDN, GSM, GPRS) and parameterization (analogue modem, ISDN, GSM). The optional serial interface integrate digital sensors by RS232 or RS485 with adjustable protocol.

## Features

- Easy integration of any sensor independent from pin assignment and power supply without need of external wiring
- Support and assistance by sensor database for fast and easy set up and maintenance
- Time- and interval management for each sensor with synchronous and/or conditional storing.
- Very low power consumption
- Alarm management via modem by call or SMS
- Parameterization by modem (analogue, ISDN, GSM) or local (RS232)
- Connect ability for data transmission by Modem, GSM
- **Option:** Online data transmission by TCP/IP via GPRS (DCM - module) or Ethernet (WEB II – module) to FTP- or MDS-Server.
- **Option:** 2 x serial interface to integrate digital sensors via RS232 or RS485 with adjustable protocol.

## Technical specifications

### MDL 4/1

Input		Integrated overvoltage protection, continuous voltage proofed up to 36 V
4 Input – Analoge	voltage current resistance	0 - 2,5 VDC (22 Bit) (equivalent to 1 $\mu$ V) 0 - 20 mA (22 Bit), 4 - 20 mA (22 Bit) 1 – 10 k $\Omega$
1 Input – Frequenz (Wind)		2 - 1500 Hz Resolution: 0,1 Hz
1 Input – Impulse (Precipitation)		0 - 10 Hz
Memory		Failsafe ring buffer (non-volatile storage) 2 MByte (equivalent up to 600.000 measured values)
Storage methods	synchron asynchron conditional	Interval: 1s – 24h Interval: 1s – 24h If a measurement values exceed a limit values (absolute, relative, time-related limit)
Display		Four line LC-Display, 4 x 20
Storages function		actual values, average, minimum, maximum, standard deviation, sum and intensesness
Output relay		Semi-conductor relay, max. 1,8 A / 24 VDC
Interface – Digital		1 x communication interface: RS 232, 9,6 - 115 kBd
Power supply	voltage current standby	5,5 - 15 VDC max. 30 mA (without sensors) (measuring time up to 2 seconds) 100 $\mu$ A
Power supply sensors	voltage current	5 or 15 VDC 2,5 V reference voltage max. 50 mA for each sensor
Temperature range		-40 °C to +60 °C
Dimensions		Aluminium anodized 170 x 120 x 75 mm 500 g
Protection class		IP 55
Assembling		Mounting on an h-rail